MGM University, Jawaharlal Nehru Engineering College, Chhatrapati Sambhajinagar
CA-2 Examination

Class: SY-B. Tech (All)
Course Code: 20UCC401B
Course Name: Engineering Statistics   Date:03.04.2024

Sem: IV
Max.Marks:10
Time:10.00 -11.00

Q.1   Solve any **Two** questions.

A) The ranks of the same 15 students in two subjects A and B are given below; the two numbers within the brackets denoting the rank of same student A and B respectively.   (5M)
(1, 10), (2, 7), (3, 2), (4, 6), (5, 4), (6, 8), (7, 3), (8, 1), (9, 11), (10, 15), (11, 9), (12, 5), (13, 14), (14, 12), (15, 13). Use Spearman's formula to find the rank correlation coefficient.

B) Fit a straight line of the form y = mx + c to the given data, by using method of least squares.   (5M)

x	0	1	2	3	4	5	6	7
y	-5	-3	-1	1	3	5	7	9

C) A departmental store gives in-service training to its salesman which is followed by a test. It is considering whether it should terminate the service of any salesman who does not do well in the test. The following data gives the best scores and sales made by nine salesmen during a certain period: (5M)

Test scores	14	19	24	21	26	22	15	20	19
Sales ('000 Rs.)	31	36	48	37	50	45	33	41	39

Calculate the coefficient of correlation between test scores and the sales. Does it indicate that the termination of services of low test scores is justified? If the firm wants a minimum sales volume of Rs. 30000, what is the minimum test score that will ensure continuation of service? Also estimate the most probable sales volume of a salesman making a score of 28.

END

15 MAY 2024/SY/ECE(ECT/2023-24/12/C-2/

MGM University, Jawaharlal Nehru Engineering College
CA-II (2023-24) Part-II

Class: SY (EC&CE)   Max Marks: 10
Subject: Signals and Systems   Duration: 45 Minutes

N.B.: -   Solve any two questions.

Sr.No.	Question	Marks	CO	BL
1	Define Laplace Transform, Inverse Laplace Transform and Region of convergence. Also explain the existence conditions of Laplace Transform.	05	CO4	1
2	Find the Laplace Transform of the function, $x(t) = e^{-at}.u(t)$	05	CO4	2
3	Enlist the properties of Laplace Transform. Prove any two.	05	CO4	1
4	Determine the Inverse Laplace Transform of the function, $X(s) = 1 / (s^2 + 3s + 2)$	05	CO4	2

MGM UNIVERSITY
J.N.E.C. AURANGABAD
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION
S.Y. – (AI&DS, ECE)
Year: 2023-24 (Semester -IV)

Course Code: 22UET403D, 21UET402D

TEST: CA 2   Max Marks: 10

Microprocessors and Microcontrollers

Time: 45 Minutes   Date: 03.04.2024

N.B.

(I)Solve any two questions.

(II)Each question carries equal marks.

(III)Assume suitable additional data if necessary.

Q.NO	Questions	Level	CO
1	Draw and explain internal RAM organization of 8051 Microcontroller.	L2	4
2	Compare Microcontrollers and Microprocessors on various parameters.	L2	4
3	Enlist the salient features of 8051 Microcontroller.	L2	4
4	What are different addressing modes available in 8051? Explain with the help of instructions.	L2	4

15 MAY 2024/SY/ECE/ECT/2023-24/P2/CA2

MGM University, Aurangabad
Jawaharlal Nehru Engineering College
CA-II (2023-24) Part-II

Class: SY (EC&CE)   Max Marks: 10
Subject: Analog and Digital Communication   Duration: 45 Minutes

N.B.: -   Solve any two questions.

Sr.No.	Question	Marks	CO	BL
1	Define frequency modulation and derive an expression for it.	05	CO3	1
2	Compare and contrast between amplitude modulation and frequency modulation.	05	CO3	2
3	What is pre emphasis and why it is necessary in frequency modulation.	05	CO3	2
4	Draw the frequency spectrum of FM signal and explain it.	05	CO3	2

15 MAY 2024 /SY/ECE/ECT/2023-24/P2/CA-2

MGM UNIVERSITY
J.N.E.C. AURANGABAD
Department of Electronics &Telecommunication
S.Y. - B.TECH. ECE/AIDS
Year: 2023-24 (Semester -IV) Part II

TEST: CA II
Time: 45 Minutes

Course: Object oriented Programming.
Max Marks: 10
N.B.
(I)Solve any two questions.
(II)Each question carries equal marks.
(III)Assume suitable additional data if necessary.

Q.NO	Questions	Level	CO
1	What is nested class? Write a program to demonstrate inner and outer class.	L1	4
2	Explain method overloading and constructor overloading with example.	L1	4
3	Write a program using multilevel inheritance to display university model.	L2	4
4	What is use of static keyword?	L1	4

15 MAY 2024/SY/ECE/ECT/2023-24/P2/CA-2